in the *Scouleri*. Its stylets are also flattened and carinated, instead of being rounded. From Portlock's *C. Colei* it will be distinguished by having the carinæ of its stylets and telson smooth, instead of crenate.

So far as we are informed, this is the first species of this genus found in America. It is another decidedly Carboniferous genus, found in our Coal Measures, directly associated with numerous fossils that occur in the beds on the Missouri, in Nebraska, that have been wrongly referred by some authors to the Permian (Dyas).

Locality and position. Near the middle of the Coal Measures at Danville, Illinois, associated with numerous Upper Coal Measure species.

Descriptions of FOSSILS collected by the U. S. Geological Survey under the charge of Clerence King, Esq.

BY F. B. MEEK.

WASHINGTON CITY, March 21st, 1870.

PROF. JOSEPH LEIDY.

Dear Sir,—I send herewith, to be presented for publication in the Proceedings of the Academy, descriptions of a few of the fossils brought in by the United States Geological Survey under the direction of Clerence King, Esq. You will please state, in presenting the paper, that the Trilobites described in it from Eastern Nevada, are decidedly Primordial types, and, so far as I know, the first fossils of that age yet brought in from any locality west of the Black Hills. Mr. King's collections also establish the fact that the rich silver mines of the White Pine district occur in Devonian rocks, though the Carboniferous is also well developed there. The Devonian beds of that district yet known by their fossils, seem mainly to belong to the upper part of the system. Mr, King, however, has a few fossils from Pinon Station, Central Nevada, that appear to belong to the horizon of the Upper Helderberg limestone of the New York series.

The Tertiary fossils described in this paper, from the region of Hot Spring Mountains, Idaho, came from an extensive and interesting fresh-water Lacustrine deposit, and are all distinct specifically, and some generically, from all the other Tertiary fossils yet brought from the far west. Two of the species belong to the existing California genus Carinifex, or some closely allied group, while another beautifully sculptured species was thought, by Mr. Tryon, to whom I sent a specimen of it, to be possibly a true *Melania*, and allied to existing Asiatic forms.

It is an interesting fact, that among all of our fresh-water Tertiary shells from this distant internal part of the Continent, neither the beaks of the bivalves, nor the apices of the spire in the univalves, is ever in the slightest degree eroded; even the most delicate markings on these parts being perfectly preserved, if not broken by some accident. From this fact it may be inferred that the waters of the lakes and streams of this region, during the Tertiary epoch, were more or less alkaline, as is the case with many of those there at the present day.

These descriptions, as well as others that I expect to send you soon, are merely preliminary and will be re-written, and presented with full illustrations, now in course of preparation, in Mr. King's report of his survey.

Very respectfully yours,

F. B. MEEK.

Tertiary Species.

SPHÆRIUM RUGOSUM, Meek.

Shell of medium size, rather gibbous, moderately thick, quadrato-suborbicular in outline, the length being a little greater than the height; greatest convexity slightly above the middle; anterior margin more or less regularly rounded; base semielliptic in outline; posterior margin generally a little wider than the anterior, and faintly subtruncate with an anterior slope; dorsal outline rounding into the anterior and posterior margins, but more regularly into the former. Beaks not eroded, nearly central, rather prominent and incurved, but not oblique. Surface ornament-d by sharply defined, often elevated, concentric striæ, separated by rounded furrows, in which very minute lines of growth may be seen under a magnifier; the elevated concentric striæ becoming more regular, coarser, more distantly separated, and more prominent on the umbones. Cordinal margin and lateral teeth comparatively stout.

Length of largest specimen, 0·34 inch; height, 0·30 inch; convexity, 28 inch.

The most marked characteristics of this species, are its quadrato-suborbicular, rather gibbous form, very nearly central beaks, and particularly its sharply elevated concentric striæ, growing stronger, more prominent, and more distantly separated on the umbones, until near the points of the same they often assume the character of sharp, raised plications. In some of the smaller specimens, these raised, rather distantly separated, stronger striæ, extend over nearly the whole surface; while in others they pass gradually into mere irregular lines of growth, on most of the surface, occasionally separated by wider furrows.

In form this species is very similar to the existing *S. Vermontanum*, of Prime, with which it also agrees nearly in size. It is more regularly rounded in front, however, and has stouter lateral teeth; while its concentric raised striæ and sulcations are generally larger and grow more distinct on the umbones than below, instead of the reverse. In this latter character of marking it agrees more nearly with *S. aureum*, Prime, from which, however, it differs entirely in form.

Locality and position. Hot Spring Mountains, at Fossil Hill, Idaho Territory.

SPHÆRIUM? IDAHOENSE, Meek.

Shell attaining a very large size, moderately convex, rather thick in proportion to size; orbicular-subovate in outline, being wider in front than posteriorly; anterior margin regularly rounded; base semioval in outline; posterior margin somewhat narrowly rounded below and sloping forward above; dorsal margin short. Beaks placed in advance of the middle, a little compressed and directed obliquely forward and inward. Surface marked by concentric striæ and furrows. Later teeth stout.

Length, 0·98 inch; height, about 0 92 inch; convexity, about 0·54 inch.

The specimens of this shell are not in a very good state of preservation, being, with one exception, internal casts, and this one only retains a part of the shell. They certainly differ, however, from the last not only in their much larger size, but in being less nearly equilateral, more produced, and rather more narrowly rounded posteriorly, as well as proportionally less convex. The internal casts have the umbonal region, from a little above the middle of the valves, compressed. Some of these casts show a few rather distinct, broad, irregular concentric undulations, that were doubtless more strongly defined on the exterior of the valves.

None of the specimens of this shell show the hinge very clearly, but from its large size and thickness I was at first inclined to believe it a *Cyrena* or a *Corbicula*. Impressions in the matrix, however, show that its lateral teeth are not striated, nor of the form seen in the latter genus. Possibly, I should call it *Cyrena Idahoensis*. As its pallial line is certainly simple, however, and not sinuous, as in all the American living species, and, so far as known, in all the fossil Cyrenas and Corbiculas of this continent, I have concluded to place it provisionally in the genus *Sphærium*, until better specimens can be obtained for study.

Locality and position. Same as last, and from same formation at Castle Creek, Idaho.

ANCYLUS UNDULATUS, Meek.

Shell thin, attaining a very large size, elliptic-oval in outline, being sometimes slightly widest a little in advance of the middle; apex much elevated, pointed, curved backward and placed about half-way between the middle and the posterior margin; posterior slope concave; lateral slopes nearly straight; anterior slope distinctly convex. Surface marked with fine, rather obscure

lines of growth, and strong, comparatively large concentric undulations, most distinct and regular on the anterior slope, where there are sometimes very obscure traces of about three radiating ridges.

Length of the largest specimen seen, 0·67 inch; breadth of do., 0·54 inch; height, 0·35 inch.

The specimens show some variation in their proportions, as well as in the regularity and distinctness of the undulations, the largest individual from which the above measurements were taken being proportionally a little wider and more elevated than some of the smaller ones, while its undulations are less distinctly and regularly defined. As there are various gradations, however, in these characters, I am at present inclined to regard them as mere individual modifications of one species.

Owing to the thinness of the shell, the undulations are often quite well defined on internal casts, particularly along the anterior slope.

The only N. American recent species, with which I am acquainted, that approaches this in size, is the *A. Newberryi*, described by Dr. Lea, from California. From this the species under consideration differs in having its apex nearer the posterior, and much more pointed and curved backward. The undulations of its anterior slopes also give the shell quite a different appearance.

Locality and position. Fossil Hill, Hot Spring Mountains, Idaho Territory.

MELANIA (GONIOBASIS?) SCULPTILIS, Meek.

Shell of medium size, conoid-subovate; spire more or less elongate-conical, with convex slopes, the apical angle being greater in the young than in the adult, not eroded at the apex; volutions six to seven, rather distinctly convex; suture strongly channeled; aperture ovate, a little oblique, rather narrowly rounded below; lip sharp, most prominent below the middle, and slightly sinuous at the lower inner side. Surface elegantly ornamented by numerous very regularly disposed, slightly flexuous or sigmoid vertical costæ, which are crossed by equally distinct and regular spiral ridges, about four of which may be counted on each volution of the spire (excepting those near the apex, which are smooth), and eight to ten on the last turn, on the under half of which they are most strongly defined; minute lines of growth may also be seen by the aid of a magnifier; costæ slightly nodulous at the points where they are crossed by the little revolving ridges.

Length, 0·63 inch; breadth, 0·33 in.

This is a neat species, remarkable for its sharply defined and very regular cancellated sculpturing. The vertical costæ are equally well defined on all the volutions excepting those near the apex and on the under side of the last one, while the revolving lines or ridges become a little more distinct on the lower part of the body turn. Although there are nearly always four of these revolving ridges on the volutions above the last one, in a few examples as many as six may be counted on these turns, but this is due to the intercalation of a smaller one between two of the others, and the exposure of another above the suture, that is usually hidden beneath it by each succeeding turn.

Locality and position. Hot Spring Mountains, Idaho.

MELANIA (GONIOBASIS) SUBSCULPTILIS, Meek.

Shell apparently not attaining a medium size; spire conical with convex slopes; apex pointed, not eroded; volutions about seven and a half, flattened convex; suture channeled; aperture ovate, slightly oblique, rather abruptly rounded below; margin of lip most prominent below the middle, and faintly sinuous on the lower inner side. Surface ornamented with small, regular, slightly sigmoid, vertical costæ, with an obscure revolving ridge just below, and a slight angle above, the suture, to which prominences the costæ impart

a somewhat crenated appearance; lower half of last turn marked with a few distinct revolving raised lines.

Length, 0·43 inch; breadth, 0·19 inch; length of aperture, 0·14 inch; breadth of do., 0·10 inch.

This species may be at once distinguished from the last by its less convex whorls, and the absence of revolving ridges or lines, excepting on the lower part of the body volution, and the one just below and above the suture. As in the last, its apical whorls are smooth. The only good specimen of it seen is considerably smaller than the adult size of the last described species.

Locality and position. Same as last.

CARINIFEX BINNEYI, Meek.

Shell attaining a large size, depressed subglobose in form; spire scarcely rising above the body whorl; umbilicus large, but rapidly contracting within. Volutions about three and a half, increasing very rapidly in size; those of the spire a little convex, last one forming more than nine-tenths the entire bulk of the shell, widest above, and produced below so as to form a prominent ridge or subangular margin around the widely excavated umbilical region; all without revolving carinæ. Aperture large, obovate, being widest above and narrowed abrubtly to a subangular termination below. Lip remarkably oblique, apparently reflexed and strongly produced forward above. Surface marked with extremely oblique lines of growth, which sometimes form little regular costæ.

Height, 0·59 inch; breadth, 1 inch; height of aperture, about 0·50 inch; breadth of do., 0·54 inch.

This species differs too widely in nearly all of its characters to require any comparison with *C. Newberryi*, the typical and only known living species, which it also exceeds in size.

All of the specimens of this species in the collection are incrusted by a laminated, smooth calcareous deposit, that has to be removed before the surface marking can be seen. This is continuous over the suture, and covers all the volutions of the spire. At first I was inclined to think this might have been secreted by the mantle of the animal enveloping the whole shell; but farther examinations have led me to think it more probably merely an inorganic incrustation, precipitated over the surface after the death of the animal. Named in honor of W. G. Binney, Esq.

Locality and position. Fossil Hill, Hotspring Mountains, Idaho Territory. Apparently of Miocene or later age.

CARINIFEX (VORTIFEX*) TRYONI, Meek.

Shell depressed subglobose, approaching subdiscoidal, the spire being much depressed. Volutions four and a half to five, increasing rather rapidly in size; those of the spire slightly convex; last one sometimes becoming a little concave on the upper slope near the aperture, and more or less ventricose below, the most prominent part being near the rather small, deep umbilicus, into which it rounds abruptly; all rounded on the outer side, and without any traces of carinæ or revolving markings. Suture well defined. Aperture rather large, subcircular, its height being to its breadth about as 29 to 34; lip sharp, oblique, and produced forward above, faintly sinuous at the middle of the outer side as well as at the inner side of the base, where it is a little thicker. Surface ornamented with small, distinct, regular ridges, and much finer lines of growth running parallel to the very oblique outline of the lip.

Height, 0·35 inch; breadth, 0·64 inch; height of aperture, 0·29 inch; breadth of do., 0·34 inch.

This shell differs from the last, not only in its smaller size, more rounded, less rapidly enlarging whorls, and more prominent spire, but particularly in its very much less excavated umbilical region. It evidently varies consider-

* I propose the subgeneric name *Vortifex* for these shells, which differ from the typical forms of *Carinifex*.

ably in form and surface markings, some of the specimens being proportionally more ventricose, or, in other words, have the body volution, and consequently the aperture, higher in proportion to breadth than the others, while more or less difference in the elevation or depression of the spire is observable. The most marked differences, however, are to be observed in the character of the surface markings. Generally the little regular costæ parallel to the lines of growth are pretty well defined, but in some cases they fade away so as to be scarcely distinguishable from the fine incremental lines; while in others they are strongly marked, regularly disposed costæ. Sometimes, different parts of the surface of the same individual specimen present the variation of sculpturing mentioned. It may be found convenient to designate the more ventricose form as variety *ventricosa*.

Named in honor of G. W. Tryon, Jr., of Philadelphia.

Locality and position. Same as last.

CARINIFEX (TRYONI, var.) CONCAVA, Meek.

The only two specimens of this form obtained are considerably smaller than the adult size of the last described species, and differ in having the spire so strongly depressed as to be really concave, and thus to give the entire shell a subplanorbicular outline. Its umbilicus is proportionally of about the same size, as in the *C. Tryoni*, and its two or three volutions, as in that form, are rounded and without carinæ. Its aperture is more nearly circular, being about as wide as high, in consequence of the body volution being proportionally less prominent below. Its costæ are very strongly defined and regularly disposed.

It seems improbable that this can be merely the young of *C. Tryoni*, because, of some forty odd specimens now before me, not one has the apex or first two volutions concave, though they vary somewhat in prominence in different individuals.

Height, 0·18 inch; breadth, 0·30 inch; height of aperture, 0·18 inch; breadth of do., 0·17 inch.

Locality and position. Same as foregoing.

Devonian Species.

SPIRIFER (TRIGONOTRETA) PINONENSIS, Meek.

Shell attaining about a medium size, somewhat wider than long, varying from transversely subovate to a nearly semicircular general outline; rather gibbous in adult examples; cardinal margin nearly or quite equaling the greatest breadth, and terminating in rectangular or rather more obtuse extremities; lateral margins rounding to the front, which is sometimes rounded, sometimes slightly sinuous, or in other examples more prominent and subangular in the middle. Ventral valve generally rather more gibbous than the other, its greatest convexity being in the umbonal region, from which it rounds off evenly toward the front and lateral margins, as well as to the beak, which projects beyond that of the other valve, and is rather distinctly incurved; cardinal area of moderate height, narrowed to the lateral extremities, more or less inclined backward, and strongly arched with the beak; foramen having nearly the form of an equilateral triangle, and provided with slightly raised, sharp lateral margins; mesial sinus shallow, rounded, smooth, and of moderate breadth narrowed regularly, and well defined to the apex of the beak. Dorsal valve generally more than semicircular, most convex in the central and anterior regions; beak projecting little beyond the cardinal margin, and with the narrow area incurved; mesial ridge depressed, smooth, and faintly furrowed along the middle, corresponding in outline to the form of the sinus in the other valve. Surface of each valve ornamented by from eleven to about fourteen simple, regular, rounded, radiating plications on each side of the mesial fold and sinus, and also showing, under a magnifier, minute, regular, crowded radiating striæ, crossed near the front by stronger undulating lines of growth.

Length of a medium sized specimen, 0·92 inch; breadth of do., 1·20 inch; convexity, 0·72 inch.

As nearly as can be determined from a description only, this shell would seem to be closely related to *S. macrothyris*, Hall, from the Upper Helderberg Limestone of New York and Ohio (see 10th Report Regents, p. 133), but differs in being always narrower in proportion to length, never being near "twice as broad as long." Its area also differs in narrowing regularly to the lateral extremities of the hinge, instead of having parallel margins. On comparison, with good specimens of *S. Oweni*, Hall, from the Upper Helderberg Limestone at the falls of the Ohio, which species our shell nearly resembles, it is found to differ in having the beak and area of its ventral valve always more strongly arched. Its area is also proportionally narrower, and its plications larger and less numerous. There are in the collection a large number of well preserved specimens, showing the characters given to be very constant.

Locality and position. Pinon Station, Nevada. Devonian, probably of the age of the Upper Helderberg Limestones of New York.

Lower Silurian Species.

EUOMPHALUS (RAPHISTOMA?) ROTULIFORMIS, Meek.

Shell small, sublenticular, or more than twice and a half as wide as high, with the periphery sharply angular, and the much depressed spire a little more prominent than the convexity of the last turn below the angular periphery; umbilicus very wide, deep, and depressed conical; volutions six or seven, exceedingly narrow, and increasing very gradually in size, all obliquely flattened, or sometimes slightly concave on the upper slope, which is nearly coincident with that of the spire, and with the under side sloping downward and inward, and nearly one-third wider than the upper surface to the umbilicus, around which they are rather distinctly angular; aperture obliquely rhombic. Surface unknown.

Breadth, 0·32 inch; height, 0·12 inch; breadth of last turn on the upper slope, 0·15 inch; do. on the under slope, 0·18 inch; breadth of aperture, 0·09 inch; height of do., 0·07 inch.

This species is evidently nearly allied to *Euomphalus polygyratus*, Roemer, from the Lower Silurian rocks of San Saba, Texas (see Kreid. Von Texas, tab. xi, fig. 4 a, b). It differs, however, in being much smaller, its greatest diameter being less than one-fourth that of Roemer's species, although it shows nearly the same number of volutions. Its volutions are also proportionally more convex below, and slope more abruptly into the umbilicus.

Locality and position. Ridge south of Muddy Creek, Nevada Territory, from a gray subcrystalline limestone of Lower Silurian age, probably of the same horizon as the Calciferous sand rock of the New York series.

EUOMPHALUS (RAPHISTOMA?) TROCHISCUS, Meek.

Shell sublenticular, about twice and a half as wide as high, spire much depressed, or but little higher, measuring from the horizon of the sharply angular periphery, than the convexity of the last turn below the same; umbilicus wide, deep and depressed conical; volutions four and a half to five, increasing gradually in size, all obliquely flattened (or sometimes slightly concave) above, nearly on a line with the slope of the spire, and sloping downward and inward below to the umbilicus, into which the curve is so abrupt as to form an obtuse angle around the same; aperture wider than high, and rhombic subtrigonal in outline. Surface unknown.

Breadth, 0·40 inch; height, 0·15 inch; breadth of last turn, 0·12 inch; breadth of umbilicus, about 0·25 inch.

This is similar in general appearance to the last species, but may be readily distinguished by its less numerous whorls, which increase more rapidly in

size. It is much more nearly allied to a form now before me in masses of chert from the west side of Lake Pepin, in Minnesota, found in beds of about the age of the Calciferous Sand rock of the New York series. The latter, however, attains a much larger size, some of the specimens being an inch in diameter, with about six volutions. The Minnesota form is also more sharply angular on the periphery, and has the upper side of the volutions distinctly more concave, and the spire more depressed.*

Locality and position, same as last.

PARADOXIDES? NEVADENSIS, Meek.

The only specimen of this Trilobite obtained, consists of a natural cast, formed by a moderately thick crust of *Arragonite*, deposited in a mould or impression of a part of the thorax and the pygidium, with the free borders of the latter broken away. Its rather large size, much depressed form, spiniferous pleuræ, and general physiognomy, as far as seen, at once recall to the mind the well known genus *Paradoxides*. A closer inspection, however, shows its pygidium to be proportionally larger than we see in the known species of that genus, with possibly the exception of *P. Forchhameri*, of Angelin.

Of the thorax, eight of the posterior segments are preserved. These show the axial lobe to be much depressed, and about as wide as the lateral ones, exclusive of the free recurved points of the pleuræ. The segments of the axial lobe are defined by a broad rounded furrow or depression across the anterior side of each, and have much the general appearance of those of some species of *Paradoxides*, being a little thickened, squarely truncated, and slightly curved forward at the ends. But they differ in showing distinct remains of a mesial spine or tubercle on each, and in having an obscure, oblique furrow or depression on each side, passing outward and backward from the broad anterior transverse furrow to the posterior lateral angles, so as partly to isolate the slightly thickened and truncated extremities of each. The lateral lobes are nearly flat, and composed of pleuræ that extend straight outward at right angles to the axis, to their free extremities, which are abruptly contracted (almost entirely on the posterior side) into slender, rounded, very sharp spines, which curve backward and outward. Each of the pleuræ is also provided with a broad, rather deep, flattened furrow, which commences near the inner end, and extends straight outward for some distance, with parallel sides, but gradually tapers, mainly on the anterior side, to a lanceolate point, before reaching the free extremities. These furrows have not the obliquity usually seen in those of *Paradoxides*, but run parallel to the direction of the pleuræ, so as to leave slender straight ridges, of equal size, along the anterior and posterior margin of each rib.

The pygidium, exclusive of the portions of the free border broken away, has a nearly semicircular outline, being about twice as wide as long, while it is as much flattened as the thorax. The part remaining equals in length the five thoracic segments next in advance of it. Its mesial lobe is much depressed, and about three-fourths as wide, anteriorly, as the breadth of that of the thorax at its widest part seen. Posteriorly it tapers very little, and extends nearly the entire length of the pygidium, as seen with the free border broken away. It is evident, however, that the flattened border projected more or less behind its termination. It shows distinctly five segments, with indications of about two others at the posterior end. The lateral lobes have each three segments, the anterior one being extended out nearly parallel to those of the thorax, while the others are directed more obliquely backward, and rapidly widen outward. Like the pleuræ, they have each a broad flattened furrow, that of the anterior one being nearly parallel to those of the pleuræ,

* This Minnesota shell probably belongs to an undescribed species, as it has more volutions than the form described by Dr. Owen, under the name *Stroparollus* (*Euomphalus*) *Minnesotensis*. (See his large Geological Report of 1852, p. 581, pl. 11, fig. 12 and 13.) If so, it might be called *Euomphalus Pepinensis*.

while those of the other two are directed more obliquely backward, particularly the posterior one, which is almost parallel to the longitudinal axis of the body. These furrows are so deep and broad as to give the three segments of each lateral lobe the appearance of six irregular ridges, the irregularity being produced by the posterior two segments instead of passing along the middle of each segment, being curved backward so as to divide these segments very unequally, leaving the anterior part much broadest. No fine surface markings are preserved on the specimen.

Entire length of the imperfect specimen, 2·75 inches, of which remaining 8 thoracic segments form 1·70 inch; breadth of the thorax, exclusive of the free spiniferous ends of the pleuræ, 2·05 inches, and including the projecting ends of the pleuræ, 2·40 inches; length of what remains of the pygidium, 1·03 inch; breadth of do., about 1·80 inch. Supposing it to be a true *Paradoxides*, with not less than sixteen thoracic segments, the entire specimen, when complete, could not have been far from six inches in length.

It is possible I should call this species *Olenus* or *Conocoryphe Nevadensis*, but its large size seems to be an objection to placing it in any section of either of these genera. In the possession of a node or spine on each of the thoracic segments, as well as in the direction of the posterior segments of the lateral lobes of the pygidium, it agrees with the type of *Parabolina*, but unfortunately the specimen is not in a condition to show whether or not these segments of the pygidium terminated in produced marginal spines, while the furrows of its pleura have not the obliquity of those seen in that type, but agree more nearly with those of some species of *Conocephalites*. The comparatively large size of its pygidium, and the nodes or spines on its thoracic segments, as well as the nature of the furrows of the pleuræ, are rather against its reference to *Paradoxides*, and lead me to think that it may belong to an undescribed genus.

CONOCORYPHE (CONOCEPHALITES) KINGII, Meek.

Entire form ovate, and much depressed, with breadth equaling about two-thirds the whole length. Cephalic shield semicircular, or a little wider than long, with the anterior and antero-lateral borders regularly rounded in outline, and provided with a narrow, slightly defined marginal rim; posterior margin nearly straight, with the lateral angles terminating in abruptly pointed extremities, so short as scarcely to project as far backward as the posterior margin of the second thoracic segment. Glabella depressed nearly even with the cheeks, about two-thirds as long as the entire head, and between one-third and one-fourth the breadth of the same behind, but narrowing forward to its subtruncated anterior end, and separated from the cheeks on each side and in front by a shallow furrow; occipital furrow moderately well defined, and continued as rather deep broad furrows along the posterior margins of the cheeks out nearly to the points where the facial sutures cut the margin; lateral furrows not clearly defined in the specimens, but apparently consisting of four pairs. Facial sutures directed at first, for a short distance, forward from the inner anterior end of each eye, then curving gracefully outward as they extend forward, until near the anterior margin of the head, where they are a little wider apart than the distance between the eyes, but again curving rather abruptly inward, so as to reach the anterior margin nearly on a line with each eye; posteriorly these sutures extend at first outward, nearly at right angles to the longitudinal axis, from the posterior end of each eye, and then curve gracefully backward so as to intersect the posterior margin between one-fourth and one-third the distance from the lateral angles, inward toward the glabella. Eyes rather depressed, slightly arched outward, and separated from each other by a space somewhat less than half the entire breadth of the head, and placed less than their own length in advance of the posterior margin, and about once and a half their length behind the front margin of the head; visual surfaces narrow, and not showing any lenses under a good magnifier.

Thorax with its length bearing the proportions to that of the head, of 79 to

52, and to its own breadth of 79 to 107, being very slightly wider near the middle than in front, and narrowing posteriorly, with gently convex lateral margins, from behind the middle to the pygidium. Axial lobe depressed, narrow, or only about two-thirds the breadth of each lateral lobe at its anterior end, and narrowing regularly with straight sides posteriorly; segments thirteen, nearly or quite straight, and each with a small node or prominence at each end.* Lateral lobes depressed or nearly flat; pleuræ almost transverse or arching slightly backward, to near the extremities, which are abruptly pointed; each with a well defined furrow, which commences small near the anterior inner end, and widens and deepens for about half-way out, and then narrows and becomes more shallow, so as to die out before reaching the lateral extremities.

Pygidium subsemicircular, being rounded posteriorly, with a narrow, slightly flattened border, and somewhat rounded anterior lateral extremities; length bearing to that of the thorax the proportions of 30 to 79, and to that of the head of 30 to 52, with a breadth of not quite two-thirds of that of the head; axial lobe more than two-thirds the length, narrow, depressed, and showing more or less distinctly about five segments; lateral lobes much depressed, nearly twice as wide at the anterior end as the middle one, each with about three segments, which curve a little backward and become obsolete before passing upon the narrow smooth border; segments each provided with a comparatively large longitudinal furrow, corresponding to those on the pleuræ.

Entire surface apparently smooth, excepting fine radiating striæ on the anterior and lateral portions of the cephalic shield that are scarcely visible without the aid of a magnifier.

Whole length, 1·60 inch; breadth of thorax, 1·07 inch; do. of cephalic shield (somewhat flattened by pressure), about 1·12 inch; length of thorax, 0·70 inch; do. of pygidium, 0·30 inch; breadth of do., 0·60 inch.

Of this fine Trilobite three entire specimens and a part of another were obtained. They are, however, all merely sharply defined natural casts, formed by the deposition of a crust of arragonite in the original moulds left by the fossil in some kind of a matrix. The specimens were evidently somewhat flattened by pressure before or at the time they left their impressions in the rock. This compression has obscured the lateral furrows of the glabella, but most of the other characters of the upper side of the fossil are clearly seen, even to the facial sutures, and the faintly marked radiating striæ seen around the front and lateral margins of the cheeks.

The genus *Conocephalites* (or more properly *Conocoryphe*, for a strict application of the rules of priority would, I should think, require that the latter name should be adopted for the genus to which they were both applied) is so nearly allied to *Olenus* that it may not be always easy to distinguish the two types without seeing the hypostoma, and hence it is possible that the form under consideration may be more properly an *Olenus*. As it has more the regular oval outline of the former, and less pointed and produced pleura than the latter, while it shows clearly the fine radiating striæ around the anterior and lateral margins of the head so often seen in *Conocoryphe*, it more probably belongs to that genus. It is worthy of note, however, that all of the specimens seem to be much more depressed or flattened than any of the species yet described of that genus, while only one of them shows any traces of the slender ridge usually seen passing from the anterior end of each eye to the front extremity of the glabella, and in this one the ridge is so faintly marked as to leave doubts whether or not it is natural.

Locality and position. Antelope Springs, Dryont Mountains, Nevada. Lower Silurian, and probably, judging from the known position of the genus *Conocephalites*, in the rocks of this country and Europe, from the Primordial zone.

* In some specimens these nodes seem to be wanting, while in others they do not exist on all of the segments.